ARISE - C-130 Hercules 09/18/14 Science Report

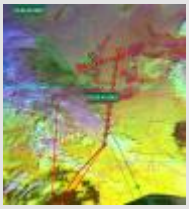
Aircraft:
C-130H Hercules #439 (See full schedule)
Date:
Thursday, September 18, 2014
Mission:
ARISE
Mission Location:
Arctic Ocean
Mission Summary:

Sea-ice Albedo/Cryosat - Flt #12

The primary objectives for this flight were to do a sea-ice characterization and a clear-sky ice surface albedo experiment over the tongue of sea-ice to the northwest of Banks Island. The flight scientist was Matt Beckley (SGT/NASA GSFC).The C-130 underflew the Cryosat-2 satellite overpass (1852 UTC) from about 70-77N latitude under mostly clear conditions. Thick stratus clouds blocked the LVIS view to the ice sheet early in the transect, but as the C-130 made its way north, the clouds cleared. LVIS obtained about 60% coverage over the entire line (roughly 370 km). Data along this line will be useful for calibration and comparison with the radar altimeter onboard Cryosat-2. Next, the C-130 flew a high altitude repeat of LVIS data from last week (9/10/2014). 100% data coverage was obtained on this westerly line, meeting a high priority Ice Bridge Science objective. An objective to characterize the sea-ice albedo at multiple altitudes coordinated with a TERRA overpass was not met due to low cloud cover that had moved into the target area, so the C-130 conducted a series of legs to characterize the radiative and microphysical properties of the low clouds. The C-130 was able to get below the clouds on both lines. Schematics describing the cloud sampling are shown below. There were also a number of coincident overpasses by the SNPP, Aqua and Terra satellites. All of the instruments were reported to work well.

Images:

September 18, 2014 Figure 1



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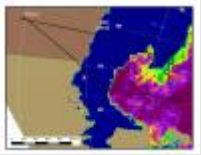
September 18, 2014 Figure 2



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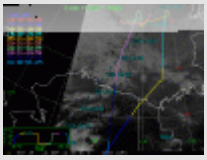
September 18, 2014 Figure 3



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September 18, 2014 Figure 4

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Submitted by:
William L. Smith Jr. on 09/21/14
Related Flight Report:

C-130 Hercules 09/18/14 - 09/19/14

Flight Number:
Sea Ice Albedo/CryoSat - Flight #12
Payload Configuration:
ARISE
Nav Data Collected:
Yes
Total Flight Time:
8.6 hours
Submitted by:
Martin Nowicki on 09/18/14
Flight Segments:

From:	PAEI	**To:**	PAEI
Start:	09/18/14 16:55 Z	**Finish:**	09/19/14 01:30 Z
Flight Time:	8.6 hours		

Log Number:	141002	**PI:**	Christy Hansen
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		

Flight Hour Summary:

	141002	151004
Flight Hours Approved in SOFRS	229	
Flight Hours Previously Approved		88.7
Total Used	140.3	18.2
Total Remaining		70.5

151004 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/02/14 - 10/03/14	Cal Flight	Science	8.6	8.6	80.1
10/04/14	Transit	Transit	9.6	18.2	70.5

Source URL: https://airbornescience.nasa.gov/science_reports/ARISE_-_C-130_Hercules_09_18_14_Science_Report?destination=node/24671

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

141002 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
08/24/14	Engineering Check Flight	Check	2.8	2.8	226.2
08/29/14	Boom Calibration Flight	Check	0.5	3.3	225.7
08/30/14	Project Check Flight	Check	5.2	8.5	220.5
09/01/14	Transit (1 of 2)	Transit	8.7	17.2	211.8

09/02/14	Transit (2 of 2)	Transit	6.6	23.8	205.2
09/04/14 - 09/05/14	Arctic Ocean - Flight #1	Science	6.6	30.4	198.6
09/05/14 - 09/06/14	140W Sea Ice - Flight #2	Science	7.1	37.5	191.5
09/06/14 - 09/07/14	Ice ZigZag-Terra - Flight #3	Science	7.1	44.6	184.4
09/07/14 - 09/08/14	CERES Gridbox - Flight #4	Science	8.4	53	176
09/09/14 - 09/10/14	CERES Gridbox - Flight #5	Science	7.7	60.7	168.3
09/10/14 - 09/11/14	MIZ Lawnmower - Flight #6	Science	8.8	69.5	159.5
09/11/14 - 09/12/14	CERES Gridbox - Flight #7	Science	7.5	77	152
09/13/14 - 09/14/14	CERES Gridbox - Flight #8	Science	8.3	85.3	143.7
09/15/14 - 09/16/14	CERES Gridbox - Flight #9	Science	8.1	93.4	135.6
09/16/14 - 09/17/14	Radiation Wall Pattern - Flight #10	Science	8.3	101.7	127.3
09/17/14 - 09/18/14	CERES Gridbox - Flight #11	Science	7.2	108.9	120.1
09/18/14 - 09/19/14	Sea Ice Albedo/CryoSat - Flight #12	Science	8.6	117.5	111.5
09/19/14 - 09/20/14	Radiation Wall Pattern - Flight #13	Science	8.3	125.8	103.2
09/21/14 - 09/22/14	Sea Ice & Radiation - Flight #14	Science	8.2	134	95
09/24/14 - 09/25/14	Gridbox TOA+Surface - Flight #15	Science	6.3	140.3	88.7